CLAIMS

1. An exhaust turbocharger of variable turbine capacity in which the driving force of an actuator is transmitted to nozzle vanes supported for rotation by a nozzle mount through a ring assembly comprising a drive ring, lever plate, etc. to vary the angle of blade of the nozzle vanes by a variable-nozzle mechanism, wherein the second supporting part is provided on the nozzle mount for supporting for rotation said drive ring when the abrasion loss of said supporting part reaches a predetermined amount.

2. A variable-nozzle mechanism of an exhaust turbocharger in which the driving force of an actuator is transmitted to nozzle vanes supported for rotation by a nozzle mount to vary the angle of blade of the nozzle vanes, wherein the variable-nozzle mechanism is composed such that a nozzle plate of annular shape is connected to said nozzle mount by means of a plurality of nozzle supports located circumferentially between the nozzle vanes, and said drive ring is provided in the side of the nozzle mount opposite to the nozzle vanes in the axial direction of the turbocharger so that the axial position of said drive ring is restricted by thrust bearing elements attached to said nozzle mount, thus the mechanism being constructed as a variable-nozzle mechanism assembly like a kind of cartridge which is easy to incorporate to or remove from the turbocharger.

3. The variable-nozzle mechanism according to claim 2, wherein said thrust bearing elements comprises a plurality of roller elements supported for rotation and cantilever-mounted to said nozzle mount on a plurality of

circumferential locations, the roller elements supporting the inner circumferential face of said drive ring so that the drive ring is possible to rotate and at the same time restricting the axial position of the drive ring..

4. The variable-nozzle mechanism according to claim 3, wherein roller pins supporting said roller elements to the nozzle mount are fixed in the holes penetrating the nozzle mount.

5. The variable-nozzle mechanism according to claim 3, wherein washers are provided on the side of the nozzle mount facing the roller elements and roller pins supporting said roller elements to the nozzle mount are inserted in the inner circumference of said washer.

6. The variable-nozzle mechanism according to claim 3, wherein said roller pin for supporting the roller element to the nozzle mount is formed as a roller pin with a washer.

7. The variable-nozzle mechanism according to claim 2, wherein said drive ring is provided in the side of the nozzle mount opposite to the nozzle vanes in the axial direction of the turbocharger so that the inner circumferential face of the drive ring is supported on the nozzle mount, said thrust bearing elements are fixed to said opposite side end face of the nozzle mount at a plurality of locations, the axial position of the drive ring is restricted by one of the side face of each thrust bearing element and the side face of said periphery part of the nozzle mount, and the end face of each thrust bearing element serves as a thrust bearing face against the bearing housing.

8. The variable-nozzle mechanism according to claim 2, wherein each of said thrust bearing elements is a nail pin

composed of a shaft portion to be pressed into the hole in the nozzle mount and a head part, of which the underside face which continues to the shaft portion serving as a thrust bearing face facing the side face of the drive ring, and the top face serving as a thrust bearing face against the bearing housing.

9. An exhaust turbocharger with a variable-nozzle mechanism in which the driving force of an actuator is transmitted via a drive ring to nozzle vanes supported for rotation by a nozzle mount to vary the angle of blade of the nozzle vanes, wherein said variable-nozzle mechanism is composed such that a nozzle plate of annular shape is connected to said nozzle mount by means of a plurality of nozzle supports located circumferentially between the nozzle vanes, and said drive ring is provided in the side of the nozzle mount opposite to the nozzle vanes in the axial direction of the turbocharger so that the axial position of said drive ring is restricted by thrust bearing elements attached to said nozzle mount, thus the mechanism being constructed as a variable-nozzle mechanism assembly like a kind of cartridge, the variable-nozzle mechanism assembly is mounted to the bearing housing by centering location with the inner circumferential face of the nozzle mount to determine the radial position thereof, the turbine casing is mounted to the nozzle mount by centering location with the outer circumferential face of the nozzle mount, and the axial position of the variable-nozzle mechanism assembly is defined between the bearing housing and turbine casing by their side parts, thus the variable-nozzle mechanism being able to be easily incorporated to or removed from the turbocharger.

10. The exhaust turbocharger with a variable-nozzle

mechanism according to claim 9, wherein the turbocharger is constructed such that the side of the variable-nozzle mechanism assembly is possible to contact the bosses provided in the bearing housing to define the axial position of the variable-nozzle mechanism assembly and the nozzle plate of the variable-nozzle mechanism assembly is received in the annular groove formed in the turbine casing to be supported therein.

11. A method of manufacturing an exhaust turbocharger with a variable-nozzle mechanism in which the driving force of an actuator is transmitted via a drive ring to nozzle vanes supported for rotation by a nozzle mount to vary the angle of blade of the nozzle vanes, wherein a nozzle plate of annular shape is connected to said nozzle mount by means of a plurality of nozzle supports located circumferentially between the nozzle vanes and said drive ring is provided in the side of the nozzle mount opposite to the nozzle vanes in the axial direction of the turbocharger so that the axial position of said drive ring is restricted by thrust bearing elements attached to said nozzle mount to construct a variable-nozzle mechanism assembly like a kind of cartridge, the variable-nozzle mechanism assembly is mounted to the bearing housing by centering location with the inner circumferential face of the nozzle mount to determine the radial position thereof, and the turbine casing is mounted to the nozzle mount by centering location with the outer circumferential face of the nozzle mount, thus the variable-nozzle mechanism being able to be easily incorporated to or removed from the turbocharger.

12. The method of manufacturing an exhaust turbocharger with

the variable-nozzle mechanism according to claim 11, wherein the axial position of said variable-nozzle mechanism assembly is defined between the bearing housing and turbine casing by their side parts so that the same can be easily mounted to and dismounted from the turbocharger.